AMERICAN JOURNAL OF

Veterinary Medicine

Published Monthly by

D. M. CAMPBELL, D. V. S.
1920 Wilson Avenue, Chicago, Illinois

Gives Most for the Money, Both to the Reader and the Advertiser

Entered as Second-Class Matter July 19, 1910, at the Postoffice at Chicago, Illinois, under Act of Congress of March 3, 1879

Messrs. Bailliere, Tindall and Cox, 8, Henrietta Street, Covent Garden, London, Representatives for Great Britain and Ireland

SUBSCRIPTION PRICE, - - - - - - - - - $1.00 PER YEAR

VOL. VI. **MAY, 1911** **No. 5**

Leading Articles

The Practical Side of Cryptorchid Castration*

By CHARLES FRAZIER, B. SC., M. D. V., Chicago

It is my purpose in this article to outline a technique which has given uniform success in my hands, one that is based on a thorough study of the anatomical and surgical conditions met, and one which I am sure any one can follow who has any skill whatsoever. I want at this point to emphasize the fact that the operation, as practically carried out, is a simple one.

Preparation of the Patient.—This can be summarized in one statement. Have the patient's bowels moderately full of ingesta and feces and absolutely free from the irritability produced by cathartics, change of food and emptiness. Do not give cathartics of any kind; do not starve the patient and do not upset the intestinal canal by a radical change of food.

A bowel that is moderately distended with ingesta, free from all forms of irritation, in normal and perfect physical and physiological condition,

*Excerpts from an article published in the *Journal of the McKillip Veterinary College Alumni Association.*

is the one that is not going to be upset by any amount of clean manipulation in the abdomen and surely is not going to be the one to prolapse most frequently. Peritoneal irritability explains in a large degree prolapses of the omentum. The omentum has been aptly called by one surgeon the "policeman of the belly," searching out, as it does, localized peritoneal disturbances, and through some power of its own going to such areas and attempting to cover them over by adhesions, where there is injury to or loss of the peritoneal tissue. Thus it is apt to wander down the inguinal canal at inopportune times.

Rectal examination prior to operation is not to be thought of as a routine practice. In animals that have had one testicle removed and a diagnosis as to the side is wanted, there is a better way of proceeding than by rectal examination, and further, in such cases, a rectal examination by the best operators gives no positive results and frequently leads to harmful procedures.

Determining the side upon which to operate.—This is not, except very rarely, a difficult question to answer. The answer is obvious if the animal has never been operated upon or if one testicle has been removed and there is but one scar and that clearly upon one side of the scrotum. A diagnosis is to be made, not at all upon the history the owner gives, but upon your own findings. This examination is to be made after the animal is cast and tied, and consequently will be considered later.

Antiseptic applications to the scrotum, prepuce and thighs, some hours preceding the operation, have no place in the technique. Theoretically they may be defended, but practically they cannot.

The total ante-operative treatment therefore consists of placing the patient upon a moderate diet for twenty-four to forty-eight hours preceding the operation. Nothing else is necessary, and other processes are not only superfluous but inconvenient to the general practitioner.

The operation is carried out in as simple a routine method as possible, keeping in mind at all times these three dangers, viz., casting accidents, prolapse of the bowels and infection.

The equipment needed for the operation consists of the following: A casting outfit, scalpel, emasculator and ecraseur, operating sheets, green soap, antiseptic tablets of bichloride of mercury, finger-nail brush, sterile, dry gauze packs in a sterile container, a trocar, a one-quart bottle, and a large needle and suturing material, preferably linen tape one-fourth inch broad.

Casting.—For the sake of uniformity of method all patients should be operated upon in the casting harness. The operating table offers no advantages and is not always at hand. The casting harness to use is the one that you are familiar with, providing you are skilled in its use and can adapt it to the operation. Properly confining the animal is a larger question than the actual operation, as upon it depends not only one's success in satisfactorily performing the operation, but also the danger of casting accidents, and to a degree the dangers of prolapse of the bowels

and peritoneal infection. The requirements of such a harness are that it must:

1. Tie the animal firmly so that change of position is impossible.

2. All four legs and especially the hind legs must be fully flexed on themselves and held so firmly that change of position is impossible.

3. That hind legs must be held in the harness in a widely abducted position with the legs so flexed that the hoof is just slightly in advance of the stifle. I cannot emphasize too strongly the importance of this step in the operation. One should study and practice the art of casting until he is perfect in it, for too many failures in surgical operations are the direct result of bunglesome and imperfect ties.

The operating sheets mentioned in the list of articles needed for the operation have served me very valuable purposes and saved me much time and annoyance during operation. They are merely muslin sheets one and one-half yards square, some of which have central oval openings seven inches long by one inch wide.

Plan of Procedure.—The details of conducting an operation in the country is about as follows: Upon arriving at the place of operation a spot for casting is selected. There are no particular specifications regarding a casting site except that it be level and of sufficient size. A grass plat is best, although not necessary. A clean operation can be done anywhere, but more care is required in dirty, dusty surroundings. When the casting site is selected, the owner is directed to procure a pail of warm water and a basin and to have the patient brought out. While this is being done the operator prepares his equipment for the operation. The scalpel, emasculator, ecraseur and needle, threaded with a piece of the tape fifteen inches long, all previously sterilized by boiling, are laid out on a clean (if not sterile) towel on some improvised table, as a board, box or medicine case. The quart bottle is filled with water and to it is added enough mercuric chloride tablets to make a solution of one to 1,000 or even one to 500. The can of sterile gauze packs, the nail brush, soap and operating sheets are placed conveniently near. The horse is then cast and tied, the operator (who, in country practice, must do the tying as a rule), wearing gloves to protect his hands to a certain degree against contamination. Chloroform is not used.

After the animal has been cast and tied properly for the operation, if a diagnosis of side is needed, is the time to make the examination. Of course, this is a question that needs attention only when one testicle has been removed and there is a scar on both sides of the scrotum. The side upon which the testicle has been removed can be told in all cases by the presence of the stump of the cord or the spermatic fasciæ in the scrotum or inguinal canal of that side except in cases where the testicle removed was an abdominal testicle, when there will be no stump present. These cases are rarely met with, and a positive diagnosis of the side can be made only by abdominal exploration during the operation. Ordinarily when one testicle is removed it is a descended testicle and its removal leaves a stump

in the scrotum and inguinal canal that can be easily determined by cares ful examination. The history by the owner is usually of no value and the character of the scrotal scar means nothing. As the operation proceeds the operator further satisfies himself of his diagnosis as will be mentioned hereafter.

A determination of the side having been made, the patient is placed in a position half way between a lateral and dorsal decubitus, with the operative field uppermost. This is usually best accomplished by placing the horse in a lateral position and then by means of a rope noose on the upper hock have an assistant apply a little traction as if to roll the patient over on its back. This not only places the patient in a good position but abducts the upper limb and improves the condition of the operative field and facilitates the operation.

Cleansing the Field of Operation.—The next question for the operator to concern himself with is that of the aseptic preparation of the operative field. An appreciative mind will understand that all the dangers of this, as well as any other surgical operation, are increased by prolonging the period of the operation. Consequently the period from the time the casting harness is put on the patient until the animal is again up and in its stall should be as short as is consistent with good surgical principles. The process of asepticizing the operative field is one in which much time can be saved by a study of the conditions. Excessive scrubbing and cleansing feats are not only without results of value but some are productive of conditions exactly opposite to those at the production which the process is aimed. Absolute asepsis can not be obtained in veterinary practice except at a great outlay of expense and trouble that is not justifiable. In cryptorchid operations relative asepsis is all that is needed for successful work. Fears of peritoneal infection and local scrotal infection are the least of my fears when operating. A good rule is to be as aseptic as the conditions will allow without endangering your patient by a prolonged, bunglesome technique (and without losing money on the operation).

The method that I follow in country work in preparing the operative field requires from two to five minutes, the length of time consumed depending on whether it is done by myself or by an assistant while I am scrubbing my hands. The process consists of scrubbing the scrotal area only with green soap and water until it is free from visible dirt. The upper foot, leg and thigh are then encased in an operating sheet which is clean (not sterile) and which is applied in a few seconds of time, being made so as to fit the parts and supplied with proper means of attachments. This protects the field against serious contamination from that source. The lower leg may also be covered in a like manner, but this is only rarely necessary. The soap and water scrubbing is confined to a small area of the scrotum at the point where the incision is to be made. This is important. Uncleaned areas near the field of operation are covered by a sheet and are just as removed from the operation as if they were on another animal.

The soap and water scrubbing over, and the two hind legs encased in protective sheets, the operator proceeds to scrub his hands and arms, paying particular attention to the hand that is to be inserted into the belly wall. Relative asepsis only is aimed at by a one- to three-minute scrubbing of the hands with the brush and green soap, followed by a short scrub in the bichloride solution. This being done, the operator with clean hands gives a short final scrub to the operative field and it is then subjected to an application of the bichloride solution and an operative sheet is then spread over the belly and scrotal region so that the opening comes over the line where the incision is to be made. The area of the incision is then painted with tincture of iodine, a quick, practical and efficient means of producing skin asepsis.

The routes by which the abdominal cavity is entered by cryptorchid castrators may be classed into three general groups, viz.:

a. Through the inguinal canal.

b. By an incision directly through the belly wall in the neighborhood of the internal ring.

c. By an incision directly through the belly wall in the upper flank region.

There are a number of varieties of each group, each of the numerous operators varying the process to suit his individual taste.

The method that I prefer is the inguinal canal route. The technique of entering the abdominal cavity by this route is as follows: An incision, five or six inches long, is made through the scrotum parallel with the median raphe and an inch or two from it. This incision is carried through the skin and dartos into the scrotal sac. When this is done the scalpel is laid aside and the balance of the process is carried out entirely by blunt dissection with the fingers. The scrotum is found to contain considerable areolar fascia and a mass of blood and lymph vessels. No attention is paid to these; they are pulled this way or that until an opening is made through them down to the external ring of the inguinal canal, which is but an oval slit through the aponeurosis of the external oblique muscle large enough to freely admit the operator's hand and which is located just in front of the pubis and at the side of the prepubian tendon, landmarks that are easily determined. The exposure of this ring and the introduction of the hand into it is a matter of no difficulty. The fingers of both hands are used in the dissection up to this point. Now but one hand is required to finish the opening.

Traversing the Inguinal Canal.—The operator places himself so that he is facing the field of operation and uses the right hand if it is the left testicle that is retained and vice versa. The hand used is inserted through the scrotal incision and through the external inguinal ring into the inguinal canal. The fingers of the hand should be bunched and directed toward the internal inguinal ring, to which they are gradually forced, separating the muscular belly of the internal oblique muscle, which lies on the palm or side of the hand, from the aponeurosis of the external oblique muscle

and Poupart's ligament which lies on the back of the hand. While the introduction of the hand through the external ring and into the canal is always an easy matter, the passing of the hand up the canal in the proper direction and the locating of the internal ring is usually attended with more or less difficulty to the uninitiated. The direction to go is deep into the fold of the groin, keeping back against Poupart's ligament and the thigh muscles.

Most beginners, I have found, have trouble in locating the internal ring because of two chief mistakes. One is in keeping too far forward and the other is in being afraid to insert the hand far enough up the canal. I therefore try to emphasize the importance of going high up into the groin and keeping back against the thigh when forcing the hand up the canal.

Locating the Internal Inguinal Ring.—After the canal has been traversed by the hand the selection of a spot for opening into the belly is the next thing of importance. There are four places that may be used and are used by various operators.

a. Through the internal ring.
b. Below the internal ring.
c. In front of the internal ring.
d. Above the internal ring.

No matter what position is selected for the opening, the wise operator will first locate the internal inguinal ring as a starting point. This ring represents the upper end of the inguinal canal. After the hand has been forced up the canal to a point beyond the upper border of the internal oblique muscle the operator finds that only a relatively thin structure separates his fingers from the abdominal viscera, which can be felt more or less clearly. This thin membrane consists of two chief parts or layers. These are, first, the general fascial lining of the abdomen, which is often designated as the transversalis fascia and which is spread out as a lining of the entire abdomen and pelvis, and, second, the peritoneum.

In the animal with the testicle undescended the internal ring is not an opening or a slit as it is sometimes said to be but it is merely a thinned-out area of the above mentioned transversalis fascia, this area being bordered and limited in front and below by an arched band of connective tissue which, after the descent of the testicle through the fascia at this point, forms the true ring. The upper and posterior borders of the thinned-out area of the fascia have no limiting band of fibers and, as a matter of fact, in the ridgling the area is not defined at all in these two directions. (The anatomical facts may be beautifully demonstrated by a dissection of a seven or eight months' fetus.) Consequently, the operator, in searching for the internal ring, does not feel for a slit-like opening, but searches for a thin portion of the membrane which presents an arched, limiting band of fibers in front and below. This band may often be demonstrated externally by deep palpation in the middle of the fold of the groin. Its determination with the hand in the canal is a matter of little difficulty.

In a great many cryptorchids the testicle or epididymis has partially descended through this area and one may find a condition of affairs varying from a mere looseness of the fascia in the area to a finger-like projection of it containing the tail or more of the epididymis. Oftimes the tail of the epididymis has descended through this area and the band of fibers, which normally contracts after natural descent of the testicle, has contracted down, constricting the testicular structures so that the globus minor of the testicle is below the band and the globus major and the body of the testicle is above and within the abdominal cavity and unable to descend further.

The internal ring, or better, this area in the transversalis fascia, lies just anterior to the shaft of the ilium at about its middle and the fascia just behind the ring is reflected backward into the pelvis where it becomes the pelvic fascia and where it is more or less firmly anchored. I, therefore, often consider the internal ring in the ridgling as being a thin area in the transversalis fascia bordered anteriorly and inferiorly by this arched band of fibers and posteriorly and superiorly by the shaft of the ilium, around which the fascia is reflected into the pelvis and to which it is more or less intimately attached. This area as defined is just about large enough to admit a hand with ease. The recognition and protection of the integrity of the borders of this internal ring is a matter of much importance in the operation.

Opening the Peritoneal Cavity.—I have satisfied myself that the best place to open into the peritoneal cavity from the upper end of the canal is at a point just in front of the shaft of the ilium, at the upper part of the internal inguinal ring. In operating, I locate the internal ring and then proceed upward and somewhat backward until I come to the point where the fascia passes back into the pelvis and here I thrust two fingers through into the belly cavity. In making the opening one must remember that there are two layers to go through, the fascia and the peritoneum. Sometimes the peritoneum pushes ahead of the fingers and strips off of the wall and requires a special effort to puncture. This is particularly true in older horses and in second operations where age and inflammation have thickened and toughened the peritoneum. It is also more apt to occur in the horses with empty intestinal tracts.

In the process of passing the hand up the canal and in locating the internal ring, the operator may inform himself concerning a number of things. If it is a second operation he may observe by the scar tissue how far up the inguinal canal the previous operator went and where and whether or not he entered the abdominal cavity. If a diagnosis of side has been made, the operator while in the canal confirms it by the absence of the cord stump in the canal. One, of course, observes whether or not the testicle or any part of it has descended into the canal, producing a complete or partial flanker. If it is a complete flanker, all of the testicle having passed through the inner ring, the case is handled as a plain colt. If only a part of the testicle is descended, ignore the condition and operate as a

ridgling, making the opening at the usual point. In the partially descended testicle it is almost always the tail of the epididymis that has descended and the ring has contracted down around it so that the testicle cannot pass through and usually cannot be pulled through with safety to the ring. I have found that these are best handled by passing up along the side of the descended tail and, making the opening at the usual place, pulling the descended portion back into the belly and out the opening made.

Before leaving the subject of the making of the opening into the belly I wish to emphasize one thing. Preserve the integrity of the band of fibers that bounds the internal ring anteriorly and inferiorly. This band is not easily torn, but in the use of force in extracting the testicle or in other manipulations see to it that no great tension is thrown on it. So long as this band is intact the rent in the fascia is limited by it. If it is torn across, any increase in the intra-abdominal pressure may cause it to tear farther down and the protection against prolapse of the bowel is lost. In all cases where an enlargement of the opening is necessary make it upward and backward; never by use of the knife or other means enlarge the opening in the other directions. If one finds a testicle so large that it cannot be forced out through this area without endangering this band of fibers, then it is too large a testicle to be removed through the inguinal region. This is too dependent a portion of the belly wall for large openings at any point. My method of handling such cases, which fortunately are very rare, is, if the testicle cannot be forced through the opening after all means of reducing its size (as the tapping of cysts, etc.) have failed, to discontinue the operation at this point, allow the inguinal wound to heal, and after three or four weeks remove the testicle through a laparotomy wound in the upper flank region.

Locating the Testicle.—We will presume that the operator has traversed the inguinal canal, located the internal ring area, and advanced beyond this area in a direction upward and backward until he finds his fingers against the pelvic inlet at the middle of the shaft of the ilium, and at this point has thrust two fingers through the medium separating his hand from the peritoneal cavity. With the same movement by which the opening is made, it should be enlarged to a size that would about admit three fingers, by the spreading of the two fingers that have been used. If this is carried out quickly and if the rent made is held open by the two fingers and at the same time the hand is retracted somewhat so as to make an empty space in the upper end of the canal, the testicle or some part of its cord will be forced out into the palm of the hand. This will occur in a very large percentage of the cases, and I will say in all cases that are not complicated by adhesions or grossly pathological testicles.

This little process of "coaxing" the testicle out is possible only when the animal is properly tied, when the opening is properly located, when the abdomen is not too empty, and there is an intra-abdominal pressure, and when the animal is not anesthetized. To the beginner in the art,

with a doubt of his ability, there is no more pleasant sensation than that produced by the testicle forcing itself upon him and down the canal.

If the "coaxing" process fails in its purpose after a few seconds' trial, then the fingers explore the region inside the opening. The cord structures pass from above downward in close juxtaposition to the opening. They are attached to the belly wall near the opening and consequently cannot get far away. More often they are right beneath the finger tips, very often they are in front of the opening and less frequently they are behind the opening. In the past six years with a large series of cases it has not been necessary for me to introduce the entire hand into the abdomen to locate the testicular structures. I have, in several cases, introduced the hand into the abdomen for the purpose of examining pathological and enlarged testicles, and for overcoming certain conditions in the removal of testicles.

No Search Necessary.—With due attention to the entrance into the abdomen, search for the testicle is eliminated. It is right at the finger tips when they are introduced. The only thing that is necessary is to be able to recognize the difference, by sense of touch, between the testicular structures and loops of bowel. This should not be difficult, but I notice that some are unable to do it with certainty. Examination of the structures that present themselves to the fingers will soon reward the operator by a discovery of the cord or testicular parts. If in doubt, bring the structure down the canal and examine it by the sense of sight. Remember that some of the structures wanted are just inside the opening and that a little patience will reveal them.

The time-worn quack story about going up to the diaphragm and the spine to find the testicle is to be forgotten. It is for the edification of the laity only. I have never found it of value to use the gubernaculum as a guide in finding the testicle. Some parts of the epididymis, cord or testicle presents itself invariably upon entering the peritoneal cavity, and rarely indeed is the slightest search required.

Removal of the Testicle.—The testicular structures having been located and recognized, they are to brought down the canal and removed. This is usually an easy matter. The testicle and epididymis are drawn down by the fingers until an emasculator can be applied. It is well to have at hand an ecraseur to use in case the cord structures are so short that the testicle cannot be drawn far enough down to use the emasculator. One can use an ecraseur in all cases and dispense with the emasculator altogether, but I have found that an emasculator can be used in about ninety percent of the cases and, being a much quicker and easier method than the other, one is justified in carrying both instruments in his equipment. In cutting off the testicle see that the three parts are removed, viz., body of the testicle, head of the epididymis and tail of the epididymis. These three parts are often far separated in a retained testicle and it is well to see that they are all included in the parts removed.

I might say in this connection, that the old idea that leaving on the stump of the cord, a part of the epididymis would influence

the nervous and physical development of the animal and give to it the characteristics of a stallion cannot be substantiated. The influence that the testicles have upon the physical and temperamental development of the animal depends upon an internal secretion elaborated by these organs, absorbed into the blood and lymph channels and exerting its influence, in harmonious relation to other internal secretions, upon the activity and metabolism of the various systems of organs. This internal secretion is elaborated largely if not entirely by groups of epithelial cells embedded in the stroma of the body of the testicle and not found in any part of the epididymis. I have satisfied myself on the proposition by leaving the epididymis in a few castrated animals with no effect.

Complications that May Exist.—Occasionally more or less difficulty is met with in bringing the testicle through the opening and down the canal. When one has located the cord and moderate traction on it fails to bring the testicle into the canal it is due to one of the following causes:

1. An enlarged testicle, which hangs heavily over the border of the ring.
2. A partially descended testicle, the tail of which is gripped by the contracted ring (this, of course, should have been recognized previously).
3. Adhesions of the testicle to the abdominal wall at some point.

In the presence of any of these complications the first thing to do is to examine and diagnose the complicating conditions. The cord which has been grasped and pulled down into the canal is held by the fingers of the free hand or by a pair of heavy forceps. The hand in the canal is then passed up along the cord and with the fingers, or if need be the entire hand, in the peritoneal cavity the structures are examined, remembering that the testicle is attached to the lower end of the doubled cord in the inguinal canal and that by following this out the testicle will be reached. Occasionally it may be best to turn the cord loose, especially if the entire hand is inserted into the abdomen. Cases of these kinds are fortunately rare and when one is met a little patience on the part of the operator will allow him to make a positive diagnosis of the complicating condition.

The treatment of adherent testicles is obvious. The adhesions are broken up and the testicle brought down. In the cases in which the tail of the epididymis has descended through the internal ring and is in the grasp of the ring the treatment consists in pulling it back into the belly and out through the opening and down the canal. The handling of enlarged testicles is a subject of more importance. From a practical standpoint the enlarged testicles may be divided into two classes, viz., cystic and solid, the former admitting of a reduction in size by tapping. Upon the discovery of an enlarged testicle during the progress of the operation the operator settles two questions in his mind. The first is, is the testicle small enough to pass out through the ring safely. This, however, varies greatly in different cases and the operator is the judge of the possibilities in a given case. If the testicle is cystic, it is tapped through the inguinal canal with a long trocar. The technique in doing this is as follows: An

assistant, not necessarily but best a skilled assistant, empties out the rectum of the patient and inserts the hand into the same as far forward as possible. By the directions and assistance of the operator, the assistant, by rectal manipulation, pushes the testicle up against the internal ring and holds it there firmly by pressure from behind. The operator then inserts a trocal up the canal, and it is usually an easy matter to draw off the cystic fluid. The rectal manipulation of an assistant is of great value also in the withdrawal of a large testicle through the internal ring. Where the mass is so large that there is difficulty and danger in pulling it through the ring by traction on the cord alone, then an assistant working through the rectum can be of great assistance. He can force the testicle through the ring in a manner that is much safer than that of pulling it through and much larger testicles can be removed safely by such means than can be removed by pulling alone.

Laparotomy May Be Necessary.—If the examination or repeated trials demonstrates the fact that the testicle is too large to be safely removed through the inguinal canal and its size cannot be reduced by tapping or other means, then there is but one thing to do. Discontinue the attempts at removal, dress the wound, allow the patient to rise, and wait a couple of weeks until the inguinal wound is healed and then take the testicle out through a laparotomy opening in the upper flank. One might argue at this point that a rectal exploration preceding the attempted operation would have made unnecessary the exposure of the patient to the dangers attending the abdominal exploration. But this is not true. I have yet to see the man who is positive enough in his findings by rectal examination that he will gamble on his diagnosis. Abdominal exploration is certain in its results and the dangers are practically nil when one practises a good technique.

The tapping of cystic testicles is not attended by any danger. The contents of these cysts is sterile and leakage into the peritoneal cavity is of no consequence. I remember of but one report in the literature of an infected testicular cyst. They are so rare as to be of negligible import.

Wound Treatment.—We will now presume that the operation has advanced to the point where the testicle has been disposed of. The dressing of the wound is then to be undertaken. This is simple. It is best explained by emphasizing a few things that it is important not to do. Do not, at any time, introduce any kind of antiseptic or aseptic fluids into the inguinal canal. From the time the operator takes his scalpel to make the scrotal incision until the operation is completed, clean methods are important, but antiseptic solutions are to be tabooed. At the end of the operation the blood in the wound is left there. There is no hemorrhage of any consequence and it is seldom that one needs to ligate a bleeding point. The only hemorrhage that one can have is from the vessels of the dartos and they are small. Hemorrhages from the stump of the cord is practically unimportant except occasionally in the pathological testes, in which case one can ligate before cutting off with the crushing instruments.

Do not introduce a pack of any size into the inguinal canal. I believe that any operation that requires the canal to be packed is, generally speaking, a failure. Operating by the foregoing described method, heeding the warnings that have been given, one will never have need of an inguinal pack.

The opening into the belly that is described in the foregoing is a self-protecting one against escape of the viscera. Of course, it is possible for a loop of bowel to come down, but I have never had such to occur. The dressing of the wound that is to be recommended is as follows: As soon as the testicle is disposed of a small pack of dry, sterile gauze is placed in the scrotum and the scrotal wound is sutured by a continuous suture of the linen tape. Its chief purpose is to absorb by its capillarity, the juices collecting in the wound and when removed, twenty-four hours later, to leave a patent well-drained wound. In suturing the wound it is well to leave the ends of the sutures long so that they hang down a distance of four of five inches. This facilitates their removal. The owner or caretaker of the patient, if in country work, is shown how the stitches are put in and is advised how and when to remove them.

Accidents Subsequent to Operation.—The release of the patient from the casting harness should be conducted with care. Outside of casting accidents, the period of release and until patient gains his feet, if attended by struggling, is a time when intestines may be forced down into the canal. Consequently this period is to be considered one of the danger periods. The ropes must be removed with dispatch and removed quietly so as not to excite the patient. When untied the patient is given assistance in arising so that awkward movements, as wide abduction of the hind limbs, will not occur to open up the canal and tempt intestinal protrusion. I believe that the only danger of intestinal prolapse with the above operation is when the animal, carelessly forced to arise by the operator, awkwardly staggers about with the hind limbs widely apart and the belly muscles tensely contracted in its attempt to gain a balance. Therefore, care at this time is important.

If the intestines should prolapse at this time (a thing which I have not seen with this operation, but have experienced in using other methods), the scrotal pack and sutures will protect against all dangerous conditions until they can be returned. With the internal ring intact, as soon as the animal is squarely on its feet there will be a tendency for the intestines to return to the belly. This may be assisted if necessary in two ways. One can use a little pressure upward on the inguinal region or he can insert the hand into the rectum and by sweeping it across the region of the internal ring, pull the intestines back into the belly.

After-care.—The after treatment of the patient is simple. As soon as he is released he is given a little water and is tied in a comfortable place and in such a manner that he cannot lie down. He is allowed a moderate ration of food and is kept quiet for twenty-four hours. At the end of this

time, in the uncomplicated cases, the caretaker removes the sutures and pack after which the patient is treated as he would be had he been a straight colt. He is allowed to run at large or is given plenty of exercise and a full diet. I have never found irrigation or other treatment of the wound necessary. He is kept standing only twenty-four hours.

In Conclusion.—We may say the uncomplicated case requires but a short time for castration and is but little affected by it. These cases will feed immediately upon being tied in their stalls and there are no post-operative complications of any sort to deal with. Swelling of the scrotum and prepuce is usually less in evidence than in straight colts as the pack produces a better draining wound. Peritonitis is an evidence of unexcusable errors and carelessness in operating.

Double cryptorchids are quite frequently met with. They are handled as the single ones. Removal of the two testicles through a single opening is rarely advisable. Remembering that practically all cryptorchid testicles may be removed with but one or two fingers inserted into the peritoneal cavity, one can see that the opening up of the second inguinal canal would be far less injurious than inserting the whole hand through the belly wall in the attempt to bring across the second testicle. It is best to make a double operation out of it, but remove both testicles at one casting.

The operation where entrance to the peritoneal cavity is made by an incision directly through the belly wall in the neighborhood of the internal ring is used by several operators and with success. I have not found it as satisfactory, from a number of standpoints, as the inguinal canal route.

An operation that one will very infrequently have occasion to use is that in which the peritoneal cavity is reached through its triangle of the upper flank. This operation is the one of election when a large testicle is to be removed. The opening is made at a point where it can be completely controlled from a surgical standpoint, it can be closed and protected and it is where danger of intestinal prolapse is absent. Opening the belly cavity in this region is a perfectly safe procedure under even moderate aseptic conditions. I have had occasion to use it in cryptorchids and have repeatedly used it in spaying mares.

Young patients are much more satisfactory to operate upon than older ones. One should, in studying the operation, select untouched yearlings or two-year-olds for his first patients, the yearlings being better than the two-year-olds.

Complicating conditions in young patients are exceedingly rare; in older ones they are much more common. Adhesions, hyperplastic and cystic testicles and the partially descended and strangulated testicle are all results of age. Older animals are more difficult to confine properly and being more liable to present complicating conditions are more apt to suffer from the accidents of the operation.

To the beginner I would recommend that he select a young patient, and before operating carefully map out his plan of procedure. Nothing counts like system and nothing succeeds like the uniformly systematic man.

The Care of the Navel of the Newborn

By W. L. WILLIAMS, V. S., Ithaca, N. Y.

(*Concluded from page 508 last month*)

But it is held, the human obstetrician ligates the navel stump and why should not we also? The cases are not parallel. The human obstetrician ligates the cord under careful antisepsis, after expressing the Whartonian gelatin and other fluids, then applies antiseptic or aseptic dressing to the wound which is retained in place by a clean bandage and the infant is kept in a dorsal recumbency with no opportunity for fecal, urinal or other soiling of the dead stump.

If the ligation of the navel cannot prevent infection there would seem to be but two other reasons for the procedure, hemostasis and fashion. In an extensive obstetric practice extending over thirty-two years the writer has not observed fatal or important navel hemorrhage and has learned of but one case from his fellow veterinarians. That one case was in a foal, belonging to a veterinarian who ligated the cord. Apparently he had excised the cord too long, the excised arterial stumps retracted up through the ligature and failed to close as the ruptured end would have done, the escaping blood accumulated above the ligature, distending the amniotic sheath of the cord, pushed it off and permitted the fatal hemorrhage.

Fatal umbilic hemorrhage rarely, if ever, follows the normal division of the umbilic cord by linear tension (herbivora) or by gnawing (carnivora). Ligation is wholly superfluous from a hemostatic standpoint and if accompanied by excision of the cord adds greatly to the danger from hemorrhage because an excised artery bleeds more freely than an artery severed by any other method. Clinically an artery is generally not held by a ligature about the cord, especially if the cord is divided reasonably short as that in most navel ligations the control of the hemorrhage is due, not to the ligation but to auto-hemostasis, in the ordinary course of the normal physiologic powers of the umbilic arteries.

If we examine the question clinically we find that the above conclusions are borne out by every-day experience.

Foal after foal perishes from navel infection and a far larger percentage of foals succumb with, than without, ligation. *On the other hand, navel infection is uniformly prevented by open antiseptic, desiccant handling of the navel.* If the normally ruptured navel, or the navel artificially divided in a manner simulating the natural method (linear tension, scraping, ecrasement) under antiseptic precautions and the Whartonian gelatin is pressed out and a desiccant antiseptic is applied navel infection is promptly and effectively barred. If the freshly ruptured navel, from which the

Whartonian gelatin and other fluids have been expressed, is immersed in a 1-1000 corrosive sublimate solution for fifteen to twenty minutes it will have become well disinfected. This may be conveniently accomplished by filling a cup with a solution and pressing it against the abdominal floor around the navel, thus immersing the navel stump within the solution. After this thorough disinfection, desiccation of the stump may be hastened and the sealing of the wound against infection insured by dusting the stump over with a powder consisting of equal parts of gum camphor, alum and starch, finely powdered. This may be repeated every thirty minutes until the desiccation is complete and a hard, dry antiseptic scab is the sole remnant of the umbilic stump; the wound is sealed and infection is excluded.

If sure that the navel is reasonably clean, the immersion of the stump in the corrosive sublimate solution may be safely omitted and the desiccating antiseptic powder at once applied. Or after the cord has been ruptured and the fluids expressed from the stump it may be efficiently disinfected and desiccated by the application of tincture of iodine, but this needs be done with great care, lest the skin about the navel be blistered. Iodine is not wholly safe in the hands of the layman, and it is the layman who must usually care for the navel of the new-born under directions from the veterinarian.

While we frequently see glowing accounts of how navel infection in new-born animals has been cured by this or that veterinarian by bacterins or other very remarkable remedies, the conservative veterinarian would as yet prefer secure prophylaxis to glorious, sensational cures. He may not get as much money out of it. Certainly the makers of bacterins will not, but he will gain much in satisfaction and professional in standing.

Neurotomies in Veterinary Practice

By L. A. MERILLAT, V. S., Chicago, Ill.

(*Concluded from page 504 last month*)

The contraindications for neurotomies are manifold. No *acute disease* process must ever be associated with such treatment. No animal affected with a *severe claudication*, no matter how old, is a fit subject for neurotomy. But above all the *unsound hoof* offers the poorest prospect for recovery even when the other conditions seem ideal. The foot with a flat sole, a sole convex from hard work or from a previous attack of laminitis, the foot with a deep fissure of the frog, the weak heels, the cracked walls, either at the toe or quarter are just so many conditions which positively condemn a subject for any kind of neurotomy. The surgeon in his deliberations must first assure himself that the hoof and its genetic structures are in a good state of health and strength. The *exostosis* engaging a ginglymoid articulation without physically obstructing its

movements, such as a small sharp osteophyte of the os suffraginus, the os corona, or the os pedis, is a very dangerous surgical prospect. *Mules*, for reasons now easily explained, are not as good subjects for neurotomies as horses.

The *untoward sequelæ* of neurotomy are most liable to occur after plantar neurotomy and tibial neurotomy. The chief serious sequellae consists of wrenching loose of the plantar aponeurosis from the semilunar ridge, shedding of the hoof, detachment of the binding ligaments of the pedal articulations, detachment of the perforatus, and fractures, particularly of the os naviculare. Digital neurotomy is seldom followed by any serious results. Among many operations performed I have never seen but one horse fall a victim to degenerative changes after this operation.

The accidents usually described under the name of "degenerations" are probably not degenerations at all. As healthy structures may be deprived of their sensory nerve supply with impunity it is very apparent that the fault must be placed upon the disease itself rather than upon lack of nerve supply. The physical injury to which the supporting structures are subjected after the pain has been removed is no doubt the real cause of such sequelæ.

Failures to cure the lameness by neurotomy may be due to several causes. The entire painful zone may not have been unnerved on account of its wide diffusion, anomalous nerves may unexpectedly maintain a sensibility to the diseased part, and finally the physical injury to which diseased structures are subjected after neurotomy may extend the inflammatory process to an unnerved zone. This latter result is often seen after digital neurotomy. A horse thus unnerved is often cured perfectly until returned to work. During the first few days everything seems satisfactory but after several days a lameness develops.

Painful stumps is one of the very common, though less serious, complications. These are due to the outgrowth of the axis cylinders into the surrounding connective tissue. When the connective tissue is derived entirely from the neurolemma the out-growth is arrested in a more or less symmetrical bulb usually called a neuroma. These stumps cause lameness; they are analagous to the sensitive nerve ends which produce sensitive scars in amputations of limbs, fingers or other appendages.

Injuries such as cuts, punctures and contusions in tissues whose sensory innervation has been permanently interrupted by neurotomy heal quite as promptly as under normal conditions. They are however, often overlooked since they cause no lameness and are submitted to violence that lameness would have prevented. The nail-prick to the unnerved foot is therefore usually a serious matter, while the calk or tread wound on visible parts of the foot is of no more consequence than similar accidents to a healthy foot, when discovered early and submitted to the proper wound treatment. I have frequently observed that quite bad cases of necrobaccillosis (gangrenous dermatitis) behave almost as well in the

unnerved foot, pastern or fetlock as they do in the normal sensitive tissues.

The behavior of a cut nerve should be studied in order to clear up certain important phases of neurologic surgery, both destructive and constructive. If a nerve is divided with a sharp instrument and then immediately re-approximated continuity will be restored in the usual time required for any other soft tissues to reunite, but the function of the nerve is not re-established for some months and the *innervation will never again be perfect.* If it be a motor nerve the muscle supplied by it will *atrophy during the reconstruction period,* and after its azones have reached by growth the old periphery the muscle again takes up its function and gradually enlarges to its original volume. A certain definite *weakness* is however always extant in the case of the motor nerves and a certain characteristic *numbness* persists year after year in the case of sensory nerves which have been severed and then immediately re-approximated. When a nerve has been mutilated or a certain part of it is resected (as in the case of our neurotomies) the chances of restoration are greatly reduced; usually the interruption is permanent and if any part of the innervation is re-established it is noted for its imperfection. In such cases the axis cylinders, unable to find the old channel, are lost wandering in the surrounding tissues or are effectually blocked in the scar or so-called neuroma. In short the regeneration of nerves, whose continuity have been destroyed occurs only when the most favorable conditions exist for the out-growth of the azones, as for example, when the approximation is perfect.

The effect of neurotomy of sensory nerves upon nutrition has, I believe, often been wrongly judged. The terrible and treacherous processes of dissolution such as casting of hoof, fracture of bones and wrenching of tendons which occur after neurotomy in acute, sub-acute and chronic forms have since Sewell been attributed to trophic disturbances incident to the lost innervation. A number of experiments made upon sound horses and many observations made in animals unnerved at different parts of the body through accident have proven to my full satisfaction that the division of a sensory nerve trunk has nothing whatever to do with the nutrition of the region supplied by its branches. It is very evident that the trophic nerves—so-called—are associated closely to the vascular system of nerves and are capable of functionating independent of the trunks having the more simple functions to perform.

It does not matter to the practitioner so much whether the effects of neurotomy are trophic or physical in origin if he appreciates fully the harmful effect of physical injury upon the unnerved regions.

Tissues as it has already been said, regenerate promptly and normally, hoofs retain their normal texture and grow quite as fast, and blood vessels undergo no perceptible changes. Tendons, synovials, and binding ligaments, do, however, soften, stretch out and loose their close attachment to the bones. These latter effects undoubtedly have their origin in pre-existing inflammations.

The following are operations which, having been tried are found worthy of being retained in the category of veterinary surgical operations when applied under the restrictions given in the paragraph on general indications.

1. *Bilateral Digital Neurotomy*, frequently designated as "The Low Operation." It is a division of the posterior digital nerve—the principal branch of the plantar nerve, distributed chiefly to the structures constituting the navicular apparatus. Its indications are navicular disease and traumatic adhesions supervening wounds, particularly nail-pricks and side-bone.

2. *Unilateral Digital Neurotomy*. The same operation applied to one posterior digital nerve is often recommended especially by Hughes for unilateral side bone.

3. *Bilateral Plantar Neurotomy*, often called "The High Operation," is a division of the metacarpal nerves on the level of the distal third of the metacarpus. These nerves where there are no anomalous arrangements of the branches is the sole nerve supply to the foot with the exception of the anterior part of the coronary cushion and sensitive laminæ of the toe.

This is one of the most dangerous of the neurotomies and should only be resorted to as a last resort for navicular disease, traumatic adhesions, ringbone and side-bone when all other methods of treatment including digital neurotomy have failed.

4. *Unilateral Plantar Neurotomy*. The same operation applied to one plantar nerve. It is an effectual intervention for unilateral side-bone and is attended by less danger than the double operation. In fact I feel free to recommend this operation in side-bone lameness that proves obstinate.

5. *Median Neurotomy* is the surgical division of the median nerve at the level of the elbow. It is a safer operation than plantar neurotomy because it does not as completely unnerve any whole region. Its chief indication is the lameness which through anomalous distribution of the nerve trunks below has not yielded to the other operations. Today it is indeed seldom applied as a first resort for any of the various conditions for which it was originally intended. The splint, the tendo-synovites, the tendinites, the osteophytes about the shin and fetlocks, the various forms of tendinous, ligamentous and synovial afflictions of the fetlocks are no longer immediately attacked by this once classical operation. This operation was once lauded very highly as a perfect cure for many of the very annoying chronic afflictions of carriage horses, race horses, saddle horses and draft horses. Today it is more prudently applied.

6. *Medio-Cubital Neurotomy* is a double neurotomy. It is median neurotomy and ulnar neurotomy combined. Alone ulnar neurotomy is never performed because the cubital nerve does not alone reach any part that is affected by diseases requiring neurotomy.

Medio-cubital neurotomy has been performed occasionally as a last resort for obstinate lamenesses. It is, however, a highly dangerous pro-

cedure that might well be omitted from our surgical operations. Degenerations are certain to follow sooner or later.

7. *Tibial Neurotomy* is a division of the sciatic nerve at the level of the distal third of the tibial region; at the point where this nerve divides into the two plantars. This operation is analogous to bilateral plantar neurotomy and although it is concerned in supplying innervation to the tarsus it has no harmful influence upon this articulation when applied to the treatment of diseases located in the regions below—the fetlock, the pastern and the foot. Plantar neurotomy might well be excluded from the surgery of the pelvic limb and tibial neurotomy substituted whenever it is desired to treat sessamoidean and pedal diseases.

It is however attended with all the grave consequences of plantar neurotomy and must be applied with great prudence. The ligaments of the fetlock and the perforatus tendon very readily wrench loose after this operation and often as soon as the patient is returned to work.

Tibial neurotomy is also performed for spavin. Alone it is ineffectual for this disease but when performed with peroneal neurotomy the claudication of spavin is usually arrested.

8. *Tibio-Peroneal Neurotomy*, the classical double operation for spavin, is a division of the sciatic as above described and of the branch of the small femero-popliteal generally described under the name of the anterior tibial nerve. Surgeons usually call it the deep peroneal nerve.

This operation (the peroneal division) is a difficult one to perform as the nerve is hidden deeply between the bellies of the anterior group of muscles. And aside from the difficulty of performance the surgical wound is a difficult one to heal. The muscles underlying and firmly enveloped in the strong tibial fascia will bulge through the surgical wound and refuse to heal, often for months. By following certain methods of suturing and by averting septic complications this inimical feature can however be overcome.

9. *Facial Neurotomy*, i. e.; division of the superior maxillary branch of the fifth cranial nerve, introduced into our surgery some years ago by Prof. Williams, has become obsolete. The disease for which it was intended seems to have been a phantom. Epileptiform symptoms against which this operation was once directed are now differently interpreted.

It may be said that all of our neurotomies belong to the group of minor surgical operations. They are after all, very simple procedures, which every veterinarian with a knowledge of general surgery can easily perform. Plantar and digital neurotomy can with the aid of local anæsthesia be performed in the standing position; the others require recumbent restraint *to which should be added* either local or general anæsthesia. The seat of operation should be carefully disinfected after approved rules of skin disinfection, and the procedure throughout should be in accordance with standard surgical methods. Nerves about to be divided should first be well stretched to assure some proximal degeneration. The wound to prevent sensitive and unsightly scars should heal by primary union and

the patient afterward should be given a protracted rest. The unnerved horse requires more careful surveillance as regards shoeing and general attention to the feet than is usually accorded to it. The feet are to be kept short but the soles should be strong and the shoeing should assist in throwing the weight toward the bony column.

FOR SALE—**Surgical Diseases of the Dog,** by Cecil French, D. V. S., $3.00 each, postage prepaid. This is an excellent work on the subject; contains ninety-one illustrations and more than 400 pages. It formerly sold for $5.00. Address VETERINARY MEDICINE, 1926 Wilson Ave., Chicago, Ill.

A CARD LEDGER is the modern ledger; no closed accounts are ever in the way; no hunting for open accounts; no indexing of accounts. Every balance is shown at a glance. A complete record with the fewest written words. See the description in the advertising section.

FOR SALE—Large veterinary practice; good house, barn, and hospital equipped with an operating table, electric light, city water, etc., in good town. Dr. C. V. Cooper, Downs, Kans.

WANTED—A position as assistant to practising Veterinarian by a member of 1912 class of Kansas State College. Experience is main thing, pay is secondary. Middle west preferred. Address No. 69, care of VETERINARY MEDICINE.

FOR SALE—An old established practice in a good town in north central Missouri. This practice now amounts to $3,500 yearly. Privilege of paying out of the income. Terms reasonable. Address No. 72, care of VETERINARY MEDICINE, 1926 Wilson Ave., Chicago, Ill.

FOR SALE—A veterinary practice, established 30 years in a town of 4000' three villages within ten miles out, nearest qualified veterinarian 18 miles. Drugs, instruments and 1400-lb. stallion. For particulars address Box 93, Magog, Que., Canada.

FOR SALE—In one of the most desirable parts of Central California, a well-established, exclusive, lucrative veterinary practice. Full equipment. For further particulars address No. 73, care of VETERINARY MEDICINE, 1920 Wilson Ave., Chicago.

FOR SALE—At a bargain, good practice in live town in northern Oklahoma. No other graduate veterinarian in county. For particulars address No. 74, care of VETERINARY MEDICINE, 1920 Wilson Ave., Chicago, Ill.

FOR SALE—Veterinary hospital and practice with equipments, stocks, slings, hobbles, medicine and instruments, or will sell practice and rent barn. 14 box stalls and 14 standing stalls. Only graduate veterinarian in the city, which has a population of 25,000. Best of reasons for selling. Address No. 75, care of VETERINARY MEDICINE.

Commencement exercises at six of the following veterinary colleges were held on April 14, and a total of 476 veterinarians were graduated on that day:

NAME OF SCHOOL	No. GRADUATES 1911
Kansas City Veterinary College	163
Chicago Veterinary College	142
Toronto Veterinary College	103
Indiana Veterinary College	71
McKillip Veterinary College	51
Grand Rapids Veterinary College	44
St. Joseph Veterinary College	17
Terre Haute Veterinary College	5

The editor was not fortunate enough to be invited to the commencement exercises of other schools, so is unable to report the number of graduates at any except those above named. Of course it was impossible for him to be in six different places on the night of April 14, and so was compelled to miss the commencement exercises at five of these schools.

AMERICAN JOURNAL OF
VETERINARY MEDICINE
SUCCESSOR TO
MISSOURI VALLEY VETERINARY BULLETIN

Per Annum in Advance..... $1.00
Single Copy..... .10

ADVERTISING RATES

1 Page, per year	$150.00
1/2 Page, per year	90.00
1/4 Page, per year	50.00
1/8 Page, per year	30.00

WANT and **FOR SALE** ads $1.00 per issue for 25 words or less, cash in advance.
All bills for advertising will be collected by sight draft after due notice.
Original articles and case reports solicited for publication.
Subscriptions from the United Kingdom should be sent to our London Office in care of Messrs. Bailliere, Tindal & Cox, 8, Henrietta Street, Covent Garden, London, England.
The Editor is responsible for his own opinions only. He tells what he believes to be the truth and will be grateful to readers if they will point out his errors to him.
Address all communications to

D. M. CAMPBELL, D. V. S.
1920 WILSON AVENUE, CHICAGO, U. S. A.

Change of Address

Why do subscribers fail to notify us of their changes of address, and then after two or three months write us for back numbers which we can seldom supply? Frankly we do not know. We have spoken of this so often and it is such a simple matter to send us a postal card, when a change of address is made, giving both the old and the new address, that we do not see why it should be necessary for us to again urge that this be done. Nevertheless at very frequent intervals we receive letters from subscribers who have not received their journal for a month or two months and in some cases for three months, because they have moved and failed to notify us of their change of address.

In some cases the writers state that they have had all their mail forwarded from their old address, seemingly not knowing that no periodicals of any kind whatsoever are forwarded by the postoffice department without the payment of extra postage. When you want your journal sent to a different address, just send us a postal card giving ***both*** your old and your new address and the matter will be attended to at once. This will save both you and ourselves difficulty later on.

Bismuth paste is being widely advertised in English veterinary publications for the treatment of fistula, poll-evil and other fistulous tracts. It is injected into the cavity just sufficiently warmed with a metal syringe. Many veterinarians in this country have had experience with this treatment of fistulous tracts. We should like to have some reports of it. May we not have them for next month?

A Booster-Kick I Appreciate

To the Editor;

DEAR DR. CAMPBELL: I am enjoying your journal very much. You are doing good work—real uplift work for the profession—but you can do better.

Here's where I kick. There isn't enough personality in it. Give more room to short, pointed, familiar, "family" paragraph-questions and answers, etc.

Tell us what you think of the various ideas presented by others. We all want to know what the editor thinks. Criticise and invite criticism—in all that is constructive and helpful. This is what we all want you to do. This is the plan I have followed for years with *Clinical Medicine* and it now has the largest paid circulation of any monthly medical journal in the world, barring none (only yielding the palm to *The Journal of the American Medical Association* among the weeklies), with an influence accordingly. Follow the same plan, Doctor, *do things* for your subscribers, help them all you can, and your AMERICAN JOURNAL OF VETERINARY MEDICINE will remain, as it already is, the strongest constructive factor in your splendid field.

DR. W. C. ABBOTT.

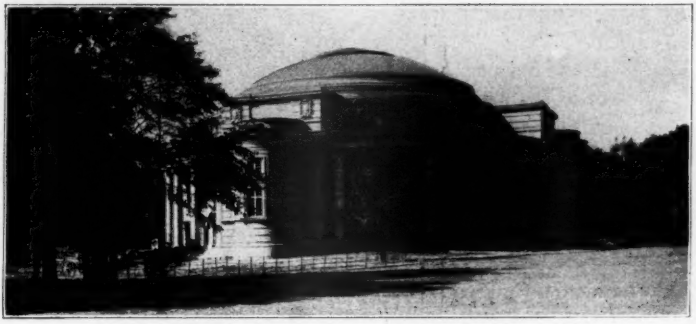
Chicago, Ill.

Thank you for your criticism, Doctor. Here's where I get busy. How does this issue strike you?

D. M. CAMBPELL, D. V. S.

Before men realized its potency for evil, the house fly was regarded as a sort of hygienic blessing because it "cleaned up" decomposing matter, but that is past. Great leaders in medical thought have published to the world that the fly is a carrier of typhoid and other diseases, that it is nurtured in unspeakable filth and contaminates everything it touches, and now, "swatting the fly" is popular in every part of the land. Let the "swatting" continue. There cannot be too much of it.

This is the Assembly Hall for the University of Ontario and will be the meeting place of the A. V. M. A. next August. The University



Convocation Hall, Queen's Park, Toronto

of Toronto, which includes a large number of affiliated schools of art, medicine and science including the Ontario Veterinary College, is located

Convocation Hall, Queen's Park, Toronto

in Queens Park. The Ontario Veterinary College will soon be moved to buildings in this park.

Convocation Hall is located one and one-half blocks from any street car line or heavy traffic way, which gives assurance that the deliberation

of the A. V. M. A. meeting will not be interrupted by the noises of commerce.

In the foreground not shown in the cut is the college gate. The University buildings all lie in the background both to the left and to the right of this building.

The second halftone shows the room in which the sessions of the A. V. M. A. will be held next August. The seating capacity of this room is eighteen hundred. Just off the Assembly room and on the same floor is a large room which will be used by exhibitors. A better place than this hall for the meeting place of the A. V. M. A. has never been secured.

Bacterin Treatment for Follicular Mange

A bacterin made from pure cultures of the staphylococcus albus has been repeatedly used by Dr. Cecil French of Washington, D. C., during the past year in the treatment of follicular mange in dogs. As a result of his rather wide experience with this bacterin in the treatment of this obstinate ailment Dr. French says: "I am positively convinced we have in this agent a certain cure for follicular mange."

Something more than a year ago reference to this method of treatment was made in a paper by Prof. Gweimer in the *Berliner Tierarztliche Wochenschrift*. The January, 1910, issue of *The Veterinary Journal* contained a report by Prof. Mettam, Principal of the Royal Veterinary College of Dublin of a single case in which follicular mange in a dog had been successfully treated with an autogenous bacterin of the staphylococcus albus. A reprint of this article appeared in the *Missouri Valley Veterinary Bulletin* in June, 1910.

Except for the three instances noted above we know of no references in veterinary literature to bacterin treatment for follicular mange. Apparently no one else has investigated this to the extent that Dr. French has. He attributes the positive curative properties the bacterin has for follicular mange to the fact, not proven but inferred from considerable evidence, that the acarus folliculorum does not thrive in the absence of staphylococci. When the staphylococcus infection, always present in follicular mange, is overcome recovery from the acarus infestation speedily occurs. Many illustrations of symbiotic existence like this can be cited among higher plants and animals and examples of it are not entirely wanting among bacteria and other low forms of life, e. g., the hog cholera virus and the bacillus cholera suis; the typhoid bacillus and the colon bacillus, and the micrococcus catarrhalis and the bacillus of influenza. It is well known that spores of the tetanus bacillus do not develop in wounds except in the presence of pus-producing organisms.

Welch of John Hopkins long ago pointed out that it is the staphylococcus albus that inhabits the deeper layers of the skin, and Dr. French's investigations indicate that it is this staphylococcus that is al-

ways associated with the follicle mite in this type of mange in dogs. Dr. French and many others have demonstrated that a bacterin made from this organism constitutes a speedy curative treatment for pyogenic infections in dogs. In conclusion Dr. French says: "My observations with this agent have led me to believe that the more acute the infestation the more rapid will be the cure. That is to say, in typical suppurative cases in young puppies, as few as two injections may be sufficient to completely bring about the destruction of the parasite. On the other hand, in the 'suppressed' cases where there is no suppuration to speak of, but a diffuse hyperemia of the skin, and the parasite is struggling for its existence, so to speak, and is only found sparingly present in scrapings of the skin, I have had to give six or eight injections before the symptoms disappeared. I may add that in every case that I have treated with the staphylo-bacterin, I have sought for and found present the acarus folliculorum under the microscope, so that I have absolutely no doubt of what I am reporting."

With every form of treatment heretofore employed for follicular or red mange in dogs the prognosis has been grave or unfavorable and the veterinary practitioner usually regards follicular mange as incurable. Works on parasitology are scarcely more optimistic concerning it. Neuman (Parasites and Parasitic Diseases of Domestic Animals) says: "Every known parasiticide substance has been tried for the cure of follicular scabies in the dog, but generally in vain; as the parasites are deeply situated beyond the reach of the remedies employed." He then enumerates several agents, which in exceptional instances have proven beneficial.

Law (Vol. V, VETERINARY MEDICINE) says: "Demodecic scabies is difficult to deal with because the parasites live so deeply in the hair follicles and the gland ducts where ordinary external dressings fail to reach it." He then outlines a number of intricate systems of treatment which have been more or less successful in some cases. Concluding with the following which would be in most cases impractical:

"Megnin employed sulphur baths daily for a month, keeping the dog in the bath for fifteen minutes each time and kneading or shampooing the skin thoroughly. In the second month he gave the bath every second or third day. He further succeeded with calcium sulphide made by boiling 100 grammes sulphur with 200 grammes of quicklime in a liter of water, then setting aside, and decanting and using the clear solution. This he rubbed into the skin with a sponge daily until successful. Fleming advises that sulphur should be given internally. Around the eyes balsam of peru one part, alcohol four parts, is a bland and effective application. It is rubbed in daily after having squeezed out the contents of the follicles."

Smith (Parasitology, published 1910) under prognosis in a discussion of Demodex folliculorum infestation in dogs says:

"This must be considered unfavorable especially if the disease has

been existent for any length of time. It is usually the case that, when one portion of the skin is apparently cured the disease breaks out again in some distant part and though months may be spent in treatment little benefit may result."

Kaupp (Animal Parasites and Parasitic Diseases) of the treatment of this subject says: "Successful treatment of this malady is difficult because of the difficulty of getting the solution to the interior of the pustules. A mixture of gasoline, oil of tar and oil of cade has been used with more or less good results."

In view of the hopelessness of all old lines of treatment for this mange the investigations by Dr. French and the success he has obtained with bacterin treatment assumes great interest and importance. Of course the final verdict as to the practical value of this treatment will have to rest upon the experience of many men in a large number of cases, but at the present time the outlook is very bright for obtaining in staphylo-bacterin a really valuable treatment for follicular mange in dogs.

We hope soon to be able to publish detailed case reports of instances wherein Dr. French used this staphyloccus bacterin in the treatment of follicular mange.

Probably there are no veterinarians in general practice who are not at times called upon to inspect live-stock for interstate shipment and many do much of this work, but not all know the requirements of the various states for the admission of live stock. We receive many letters asking this information. Those who have not already some sort of compilation of the various live-stock sanitary laws in the different states, can probably secure such information by writing Dr. D. F. Lucky, State Veterinarian, Columbia, Missouri, who has compiled a little booklet containing an epitome of the live stock laws of all the states. We think a copy of this pamphlet can be had for the asking. Dr. M. E. Knowles, State Veterinarian, Helena, Montana, has also had a pamphlet of this sort printed and we are quite sure will supply veterinarians a copy of it on request. The states are arranged alphabetically and the requirements for the importation of live stock given under each state. It is a very convenient record and in the absence of more complete information will be found useful.

Dr. S. Beatie, of Des Moines, Iowa, sends us a letterhead from a most remarkably accomplished man out in western Kansas. According to this letterhead the gentleman is an attorney-at-law, an M. D. and a Notary Public; a dealer in Wyeth harness, Moon buggies, Beggs wagons and Singer Sewing Machines. The best collector in the State, buys bad accounts, and solicits hard collections. He is the proprietor of a noted breeding stable. The letterhead concludes with "Farms, City Property, Horses, Cattle and Homes, bought and sold, Legal instruments drawn, also teeth. Money to loan."

Pointed Opinions on Live Topics

BY READERS OF

Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

A Correction

In the last line of page 443 of the February issue Dr. Smead was made to say: "I at first administer one to two ounces of adrenalin chloride." This should read: "I first administer one to two drams of adrenalin chloride." Get your February issues and make the correction now, before you forget it.

Utah Legislation

Dr. J. W. Gray of Salt Lake City, states that the Legislature of that State have enacted a law establishing a State Board of Veterinary Medical Examiners and regulating the practice of veterinary surgery, medicine and dentistry, and also a law creating a State department of live stock, providing for the appointment of an inspector by the Governor and making rules and regulations for the prevention of contagious and infectious diseases of live stock.

Both of these laws are important from the veterinarian's standpoint and indicate that the Utah veterinarians are progressive and working for their own interests.

Education, Organization and Policy

There are three things we need especially in the control or eradication of tuberculosis. They are *education, organization* and *policy*. We have a long problem ahead. The confidence and co-operation of stock owners and a public understanding of the work are needed at the outset to make any headway. Foot and mouth disease has been stamped out, and there is hope that tuberculosis, which is a much bigger problem, may be.—*M. H. Reynolds, Veterinarian for the Minnesota Experiment Station.*

Glanders in California

Dr. Keane, State Veterinarian of California, has had prepared and has introduced to his State Legislature a bill which provides for a Glanders Indemnity Fund to be raised by levying a tax of twenty-five cents per year on each head of horses, mules, and asses in the State. This fund is to be drawn upon in favor of those who have lost animals as the result of glanders, for amounts not greater than

one hundred dollars for each animal. Many governments pay a partial indemnity for the loss of animals killed because of glanders, but so far as we know this is the only State that proposes to raise funds for this purpose by a level tax of twenty-five cents per head on the healthy animals.

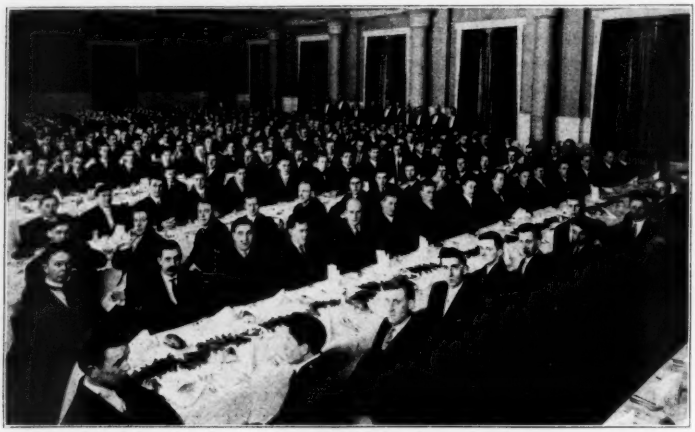
During the past year more than seven hundred mules, horses and asses were killed in California because they were affected by glanders.

Oklahoma Veterinary Legislation

From Dr. C. E. Steel of Oklahoma City, we learn that the bill introduced to legislature for the regulation of veterinary practice in the State of Oklahoma has failed to become a law. Conditions in Oklahoma in the veterinary line are very unsatisfactory. According to Dr. Steel, Oklahoma is now the "dumping ground" for the incompetent practitioners, who are forced to leave the various surrounding states by the enactment of veterinary practice laws and the State is overrun with incompetent, fraudulent, blatant, bogus, unlicensed quacks, who place the profession in the worst possible light before the public and veterinary practice in that State is anything but pleasant.

Curious Treatments

For the treatment of rabies in the olden time the dried liver of a boar drunk in wine was esteemed very efficacious. Hyena's liver was also strongly recommended; but a still more sovereign remedy was the liver of a young puppy. The fat of a seal mixed with the marrow of a hyena was prescribed both for outward and inward application. A field-mouse's tail, burned and beaten to dust, was applied to wounds.



Banquet of the Faculty and students of the Chicago Veterinary College, April, 1191. Those at th speakers table (standing) from left to right are: Dr. S. E. Bennett, inspector in charge B. A. I., Chicago, Dr. L. E. Day, Dr. Charles Hill, Dr. Jos. Hughes, Dr. L. A. Merillat, Dr. E. L. Quitman, Dr. D. M. Campbell, Dr. J. F. Ryan, Dr. Jas. Robertson, Dr. C. A. White, Dr. E. Merillat

Opportunities in Uraguay

The Bureau of Animal Industry is in receipt of a communication from the Department of State informing them that the Uruguayan Government wishes to make a four years' contract at a salary of three hundred dollars gold per month, with three professors for the government veterinary schools. Applications should be addressed as promptly as possible to the Director of the Veterinary School, Montevideo, Uruguay.

The requirements are described as follows:

"First, surgical pathology, operative medicine clinics. Second, microbiology investigation, production of vaccines and serum. Third, pathological anatomy, histology, embryology."

This information will no doubt be of much interest to many American veterinarians and will, we hope, bring a response from some of them.

Extension of Live Stock Sanitary Control

Prohibit the importation of cattle for dairy or breeding purposes unless they are tuberculin tested by a federal, state or authorized veterinarian. Require the tuberculin test on all pure breds sold in the state, and issue them a certificate of health; compel the pasteurization of all creamery by-products; enact city ordinances governing the milk supply and the sale of milk cows within their limits; compel the notification of the existence of all diseases; test all herds from which the milk is being delivered to the creameries; give free tuberculin tests to herds whose owners agree to certain conditions; have state control of the distribution of tuberculin and have a uniform certificate of health to accompany all interstate shipments of dairy or breeding cattle to certify their freedom from tuberculosis.—*S. H. Ward, State Veterinarian of Minnesota.*

Veterinary Education in Germany

EDITORIAL NOTE.—Dr. Jakeman is at present and has been for nearly two years visiting the various European veterinary schools, and has consented to write for VETERINARY MEDICINE some of his observations concerning veterinary matters in Europe. This interesting letter is the second of a series dealing with veterinary matters in Germany.

Before touching directly on veterinary topics it might be well to briefly consider the German professional man and something of the existing educational conditions.

At the time of graduation from a professional school, the men are, on an average, much older than is the case in America. This is due to at least two factors, viz.: the preliminary education necessary and the time required to complete the work before a man is entitled to practice his profession.

The standard of preliminary education in Germany is surprising to one not versed on the subject. At the age of fourteen or thereabouts the common school course is completed, the "Fortbildung-Schulwesen" or continuative school system

is then entered upon; practically all states of Germany have made this compulsory. Thus two or three years more are taken up. Then, as the entrance to the universities and all professional schools requires a successful passing through the "gymnasia" or classical public schools, which have a nine-year course, preliminary education reaches a very high standard.

Almost without exception this is the preparatory education of the veterinarian, although many have in addition a university course in one or another branch of science prior to taking up the veterinary studies proper. A German human doctor is able to complete his medical course in seven and a half years, but only under most favorable conditions. As the hospital work is not compulsory for the veterinary student he completes his course and may enter practice after about four and one-half years.

The above must impress one as being different from conditions in America and it doubtless plays an important role in influencing the difference in veterinary standards and in the public's estimation.

Although the preliminary education is of such great importance, the veterinary education itself is of still more importance in influencing the scholastic standing of the profession and doubtless both are also influential in social standing. In general the veterinary colleges are much superior to those in America. There is much more uniformity in the educational standards and also in the entrance requirements which, as has been already shown, are much more exacting than in our American schools.

In the German veterinary school each professor, instructor, demonstrator down to the third assistants are specialists and devote all their time to the college work. Even the clinics are divided up into three or four parts and each part given to a specialist who soon becomes an authority in his particular field. One would naturally think this the result of a flourishing financial condition and large salaries, but such is not the case, as many instructors and demonstrators receive only between twenty-five and thirty-five dollars a month. No one thinks more of honor and position than the German, so perhaps we may find a solution of the problem in this.

The veterinary course extends over a longer period than it does in America; the arrangements are such that credit for classes is interchangeable and therefore many of the students take different semesters at different colleges and by so doing are able to receive their lectures on a number of subjects from the best professors the country offers. In some of the German colleges little chance is afforded for practical experience in the handling of cases as even the dressing of wounds from day to day is done by assistants.

The laws governing veterinary practice are very stringent and the young graduate is confronted by several sets of examinations no matter what his chosen field may be. I may say that these examinations, as compared with those of human medicine, law, engineering, etc.,

are by no means less easy, but are just as exacting. The enforcement of these laws is carried out very rigidly and consequently not only is the quack unknown but the average graduate is professionally and generally better educated. This naturally has much to do in giving the veterinarian a higher standing in Germany than he enjoys in America.

The Germans are strikingly thorough and very strong on theory. They are preeminently scientists and researchers and it is surprising to know how many busy practitioners have a small laboratory fitted up and evidently find recreation in trying to solve some of the problems to which they cannot find a satisfactory solution from other sources.

I think I may conscientiously say, however, that the American operator is as a rule much superior to the German surgeon in actual manipulation. There seems to be a slight tendency for American methods to meet with disfavor, perhaps because of the way in which the American veterinary colleges are looked upon. Doubtless we have learned and can still learn much from our German colleagues, but in my opinion this statement can be reversed and yet contain no small amount of truth.

The Germans are justified in feeling proud of such men as Gerlach, Kitt, Koch, Johne, Friedberger, Schultz, etc., but such names as Pearson, Adams, Moore, Williams, Mohler, Rutherford, etc., are already well known to the veterinary world and most of them, as well as those of many other Americans, will be much better known before many years. The veterinary profession of America is young but not too young to predict the great future in store for it. Not in a spirit of antagonism but in one of loyalty and pride let each of us do his part to shorten the time before the profession in America shall be leading the veterinary world.

HARRY W. JAKEMAN, V. M. D.
Berlin.

Rupture of Uterus in a Pregnant Mare

I was called Jan. 23, 1911, to see a seven-year-old bay mare, weighing about 1,300 pounds. She was in foal, having been bred May 15, 1910.

This mare had been in perfect health previous and up until the time I was called. On this morning the owner said she had a profuse diarrhea, which lasted about two hours, and she had difficulty in rising, seeming to be weak in hind quarters. There was an entire loss of appetite and she would stand back in the stall to the full length of the halter and lean with her rump against the wall of the barn.

Her temperature was 105° F.; respiration about normal; pulse sixty, full and regular; visible mucous membranes very much injected; head held low, within two feet of the ground; occasionally she looked around at her side. Examination of the lungs revealed no abnormal conditions, so the patient was put on sedative treatment and I advised the owner that

I would call again the next morning, by which time some pronounced symptoms would probably have developed so we could arrive at a definite diagnosis.

The next morning the owner notified me that the mare was much improved and he thought it unnecessary for me to call. It was seven miles in the country and the roads were very muddy. But in the evening of same day I was asked to call, the owner stating that the mare was decidedly worse, showing colicky pains and very uneasy at times. I found her in a great deal of pain, continually lying down and getting up, and when down showing a tendency to lie on her back. Her pulse was ninety-six; respiration accelerated; temperature 106° F., visible mucous membranes highly injected and very red, peristalsis entirely absent. I administered anodynes in an effort to relieve the great pain, but to no avail. I told owner that she could not live long, and that I wanted to hold an autopsy, as I suspected an internal rupture of some kind. She died the next day.

Autopsy.—Upon opening abdomen, about ten or twelve gallons of a dark red fluid escaped. The intestines showed highly inflamed areas, the fetus lay just posterior to diaphragm, and inferior to stomach enveloped in the fetal membranes but outside of uterus. The uterus was completely ruptured in the fundus and the anterior part was in an advanced state of decomposition, showing this condition had existed for some time.

H. M. HAMILTON.

Muncie, Ind.

Favors the Bang System

I think we are making rapid progress in the solution of the tuberculosis problem, more through education of the people, especially the stockmen, who are coming in contact with the problem more every day. This thing grows into our herds slowly, and it is a long problem, but we must turn to growing it out. Bang's method of isolating the diseased animals in a herd will educate the breeders, and when they have their herds free they are pretty sure to keep them so. Many cattle may react to the test long before becoming dangerous to other cattle, and the Bang system is the proper thing.—*V. A. Moore, Director New York State Veterinary College.*

Horses Increase in Value

To a *New York Herald* representative, Mr. J. D. Carroll, treasurer and general manager of the big Fiss, Doerr & Carroll Horse Company, the largest concern of the kind in the metropolis, recently gave a number of facts and figures, regarding the steady increase of the values of horses during the last decade, during the course of which he said:

"I remember that we were selling railroaders to the Metropolitan Street Railway Company for $96 a head back in 1897, or about that time, and we are selling the same horse to the same company to-day for just about double that price. They buy all horses on specifications, the same as the city and all the big corporations, and it may

surprise you to know that they still take 500 or 600 head every year, while the Belt Line bought 1000 horses from us this year. The time was when the street railroads of New York and Brooklyn used up from 8000 to 10,000 horses every year, and curiously enough, they could buy them for fifty cents on the dollar as compared with what they have to pay at present, when electricity is doing most of the work.

"Our books show that when our company was organized we sold delivery horses to one of the big department stores at $110 per head, and the same store is now paying us $250 for a horse no better than the other. For comparison, again, take the heavy draft horse. In 1896 you could buy a first-class brewery drafter, weighing 1900 pounds, for about $250 or $275 on the western breeding farms. We have to pay from $425 to $450 for such a horse to-day, and when we sell him we have to take a smaller profit than we could make on the horse that cost $250 in the old days. But, of course, the increased volume of business makes up for the smaller margin of profit.

"When it comes to coach horses and fine harness and saddle horses, the increased cost to the dealer is something astonishing. Why, fifteen years ago our daily shipments from the West were all the time bringing in fancy horses that cost us $150 to $200, and which we would sell to members of the Coaching Club and others who would often make show horses of them. I remember one horse in particular that cost $140 in the West and that sold with another horse for $1200 to a man who got $7,500 for the pair. Then there was old Sundown, picked up in the street here for something like $200 and later sold at auction for $5,000 after winning at the National Horse Show. Some of the horses that we bought in those days for $200 or $300 would cost us now from $2,000 to $3,000 if we could find them in the country."

To the conservative man, who is in a position to pay any attention to live stock breeding, it begins to look as though the branch devoted to horse breeding is one which may be pursued with as much profit as any.—*The Horse World.*

Fractured Ilium

May 16, 1910, I was called to see a draft colt about two months old that had been injured in some way during the preceding night. The horses had broken out of pasture and were on the road when found. I found the colt quite lame in left hind leg and with a V-shaped cut four inches each way just posterior to the external angle of the ileum. The wound penetrated to the bone, which was fractured. I could not at the time tell just at what point. It looked like a shaft of a buggy had started anterior to ischium and run forward just scraping off the hair until it penetrated the flesh.

I made an examination to ascertain the depth of the wound and to make sure nothing remained at the bottom of the puncture, and then treated as an open wound, seeing it only once at that time. The owner came to the office for medicine, reporting the wound healing nicely. It was soon entirely healed over,

but two months later or thereabouts it began to discharge again, though not very much. When passing the farm one day I stopped and curetted the opening, which was of the nature of a fistula. I injected tincture of iodine into it and gave an antiseptic wash and it soon healed again. I told my client that if this kept up we would have to remove the detached piece of bone before it would heal permanently.

I heard nothing concerning it until September 10, when the owner said it had reopened. I cast animal and gave it an anesthetic (chloroform), opened up the wound by following the opening or pipe-like tube down to what I thought was the bottom. The colt did well for the first two weeks, and again we thought we had the condition under control, and that it would give us no more trouble. But it healed only for a short time, and October 2 the farmer telephoned, saying it was worse than any time before, being so badly swelled the colt could scarcely walk. It had become that way the last few days, and the owner wanted me to come out and cut out that hip bone.

The next day I went out and found it badly swollen as far down as the hip joint and very painful to the touch. The owner said, "Either kill or cure, as she is no good that way." As before I gave two H-M-C tablets subcutaneously, and in half an hour I cast the patient as she was getting pretty sleepy and finished anesthetizing her with chloroform. Commencing at the opening, I made an incision eight inches long downward to get best possible drainage, but found a deep seated abscess and while exploring this one struck another still lower down much larger, from which I evacuated at least half-a-gallon of pus. To do this necessitated enlarging the opening. It was now fully fifteen inches long, and on further exploration I found several smaller pockets on either side of the large one.

The hemorrhage was great. The opening extended clear around the shaft of ilium, connecting the first pocket or abscess at the inferior internal part of ilium, making it impossible to reach it before. I was satisfied I was at the seat of our trouble this time and after cleaning up parts and dressing wound I had made allowed patient to come to. She was weak, but in a few minutes was on her feet again. Considering what she had gone through my prognosis was unfavorable.

I instructed the owner to call me next morning and let me know how she was, whether dead or alive, but rather expected to hear the former, and so I did. I asked him to look when he buried her and see if we had gotten to the bottom of the abscess, and how large a piece of the ilium was broken off. His report was, "You got to the bottom of the abscess and of all pockets. A piece of the bone about eight inches long was broken off. It had partly grown together at lower part, but the upper part had not united firmly and was discolored on both sides of break.

We have never been able to tell how this happened as the wound and marks were all we had to go by.

W. O. LONGFELLOW.

A Spleen Weighing Eighty-seven and One-half Pounds

While a student of Ontario Veterinary College, I practised during the summer vacation of 1877 with the late John A. Reid, V. S., of Napanee, Ontario.

Early one morning we were called by a farmer named Gordanier living a few miles east of town. We found the animal we were called to see had died a few minutes before our arrival. It was a large dappled gray gelding, and had shown symptoms of a violent attack of colic or a similar disorder.

The autopsy revealed an enormously enlarged spleen; which we removed from its attachments and lay upon the ground. Pressure upon the external portion of the organ, particularly upon several prominent lumps, caused a peculiar crepitant sound. This latter was also observed when a stick was rubbed over the general surface. The external surface was much changed in appearance being of a very dirty brown hue, and glistening.

Examination of the liver and kidneys showed them to be normal. The posterior aorta was ruptured about four inches posterior to the hiatus aorticus. The spleen measured across the base twenty-three inches, across the apex eleven inches, the greatest thickness being six and one-half inches at the base.

Several large incisions were made with a butcher knife and there escaped a large quantity of black looking fluid of the consistence of freshly boiled coal tar. I am sorry this fluid was evacuated as otherwise the organ would have weighed twelve or fifteen pounds more.

We weighed a large box, placed the spleen in it, weighed both, and the net weight of the spleen proved to be eighty-seven and one-half pounds. The particulars of this case were read to the classes of the Ontario Veterinary College during the session of 1877-78 and the late Professor Andrew Smith intended putting the case on record and no doubt did so.

If any reader knows of a larger spleen being discovered in any domesticated animal I hope they will report it. If there are reports already on record of larger spleens I should be glad to be acquainted with the fact.

E. P. SMITHERS, V. S.
Vincennes, Ind.

A Castrator's Error

In the early part of September, 1908, I received a letter asking me to attend a cart horse, aged 3, upon which an attempt at castration had been made by an unqualified man three days previously.

The owner said in his letter: "The castrator, a man who does all that kind of work about here and has hitherto been most successful, 'bunched' up something in the clam. I saw at once it was not a testicle, and told him so. He, however, persuaded me that the colt was malformed, and that it was the other testicle all right. I, however, left in disgust, and learned afterwards that he had at once proceeded to sear through this 'something' with the hot iron. Immediately this was

completed about 12 inches of penis fell from the horse's sheath to the ground." So he had amputated the penis in mistake for a testicle! He then found and removed the other testicle. The horse was now very weak and ate but little, his sheath was a tremendous size, like a sack of potatoes.

C. E. Smith, M. R. C. V. S., saw the horse in my stead. He found the sheath almost justified the description given it by the owner of the horse. It was engorged and pointing in places with infiltrated urine. After casting the animal and well lubricating the inside of the sheath with vaseline, he discovered, after a lot of tedious manipulation, the mutilated end of the penis about a foot away from the natural opening of the sheath. The swelling being so severe, the urine could only come away in a small dribble, so he decided to make an opening for the penis stump to come through the sheath in a position close to the proper castration wounds. The urethra protruded about $\frac{1}{8}$ inch, but it was impossible to get a skin attachment for it; so it was left as it was with the intention of completing this part of the operation later on when the swelling had subsided. Punctures were made in various parts of the sheath to allow the urine which had infiltrated into the surrounding tissues to drain away. All the parts were thoroughly cleansed with warm antiseptics and dressed with carbolized vaseline.

I saw the case myself ten days afterwards. The sheath was slightly swollen; horse eating and improving in condition. Standing behind him and pulling the tail aside I could see about four inches of penis hanging through a wound in the sheath, and in position just where a mare's teats would be. The penis pointed downwards and backwards, and when urination took place there was a stream about the calibre of a clinical thermometer case directed upon the points of the hocks. The urethral opening was clearly diminished in lumen, and I told the owner that the horse should be cast again, and a further small portion of the penis removed so that the urethra could be properly everted and stitched back to avoid further stricture. This he would not consent to, preferring to "wait and see" how the horse went on.

I was not asked to attend the horse again, but being in the locality a month or two afterwards saw him at grass. Both hocks were then in a terrible mess, due to the constant dribbling of urine upon them. The urethral opening was evidently very small, as one could see the urine coming away from the penis in a very fine spray. Owner still refused surgical interference. I wrote him about twelve months ago on another matter, and asked him how "Farmer" was going on, expecting to hear he had been sent to the kennels. His reply was, "Horse working on farm regularly, and except for requiring an occasional drench goes on all right."

I might add that I tried at the time to persuade the owner to institute proceedings against the castrator, either for cruelty or in a civil court, but this he would not do, the reason being, as I learned afterwards, that he had arranged terms

for the castrator to pay him the sum of $125 in instalments, as damages. This would, of course, account for his desire to avoid further expense or publicity. He wanted the matter kept quiet till the money was paid; hence also his employing me in lieu of other veterinarians nearer his home.—J. L. PERRY, M. R. C. V. S., Cardiff, Wales, in *The Veterinary Journal*, London.

"Thigenol" treatment of

Scratches, Grease Heel, Mange, Eczema, Phlegmon, Malanders, etc., is

Rational sulphur therapy

"When veterinarians learn the value of Thigenol as a remedy for many of the ills our domestic animals are heir to, they will never be without a supply. It is nothing short of a specific for conditions known as scratches, grease heel and eczema (all stages) in dogs." *So declares a well-known instructor in Veterinary Science at a certain State University, and he speaks from experience.*

Thigenol Roche is an organic sulphur compound, and mixes freely with water, dilute alcohol, glycerine, vaseline, lanolin and zinc ointment.

Antiparasitic, Antiphlogistic, Antipruritic

Odorless on use and non-staining. All the virtues of ichthyol without its drawbacks. **Send for sample and literature.**

The Hoffmann-LaRoche Chemical Works
65 Fulton Street, New York

. . . CAPSULES OF QUALITY . . .

PLANTEN'S ELASTIC-SOFT CAPSULES

CAPSULATING PRIVATE FORMULAS A SPECIALTY

LET US SEND YOU SAMPLES.

H. PLANTEN & SON, (Established 1836) 93 HENRY STREET, **BROOKLYN, N. Y.**

"The Pioneer American Capsule House."

When writing Advertisers, please mention American Journal of Veterinary Medicine

Make your treatment of INFLUENZA, STRANGLES, DISTEMPER, "SHIPPING" FEVER, "ACCLIMATION" FEVER and other forms of Streptococcic Infection a success *this* season by using our

Antistreptococcic Serum (Polyvalent)

AND

Antigourmeaux Serum (Strangles)

These products are uniformly pure, potent and effective. They give absolute satisfaction where indicated, and there are no annoying after-effects. They are very successful as preventatives of all the above conditions. To appreciate their value you should use them at the first opportunity.

WRITE FOR QUANTITY DISCOUNTS

Canine Distemper Serum

All veterinarians having canine practice will appreciate the value of a reliable serum for the therapeutic and prophylactic treatment of Distemper in dogs. Our serum has met with the greatest success in this country, as well as abroad. Like all our products, it is absolutely pure, and can be used with impunity on any case.

Eucamphol

is the ideal antiseptic, germicide, disinfectant and deodorant. Aromatic—Healing—Non-Toxic. It is the most popular antiseptic now used by the veterinary profession. Ask anyone that has used it. It is a combination of the best ingredients obtainable, making it more effective and economical than cheap imitations.

SAMPLE AND LITERATURE FURNISHED ON REQUEST

Eucamphol Medicated Soap

This is a milled soap of the highest quality, containing 10% Eucamphol, giving it remarkably fine cleansing and healing properties. As it lathers freely and is a perfect antiseptic, it is excellent for preparing fields of operation.

Special Introductory Offer—1 doz. 4 oz. bars $1.50 by prepaid express on receipt of price.

When vaccinating, do not overlook that we supply the *original* and *genuine* Pasteur's Anthrax Vaccine.—Successful for more than 25 years.

Our Blackleg Vaccine is furnished in the powder, cord and pellet forms; single and double treatment. Recognized as the best and most reliable.

Pasteur Laboratories of America

New York, 366 W. 11th St. **Chicago, 443 S. Dearborn St.**